CSB
THE SANITARY BOARD
OF THE CITY OF CHARLESTON, WEST VIRGINIA

February 10, 2014 *via: e-mail to Kevin.R.Coyne@wv.gov*

Kevin,

CSB's responses (in red italicized text) to your 2-7-14 e-mail are as follows:

And as I said during the conversation – it would be good to start on a summary report of the WER effort that would include a summary of the sampling events (mainly the environmental conditions as the pertain to WER guidance requirements), brief summary of the WER #1 and #2 results (and just reference the lab reports in the summary for the details), and a final summary of the WER requested by CSB (essentially the final calculated number). Again, we are more than willing to work with you on this.

CSB's brief summary of WER sampling events and results:

CSB's WER for copper was based upon the guidance in the USEPA's "Streamlined Water-Effect Ratio Procedure for Discharges of Copper" (EPA 822-R-01-005, March 2001). CSB captured two sampling events at least one month apart. Regarding the "Upstream Outlet No. 001" samples, the river flow during each sampling event was stable and water quality was unaffected by recent rainfall run-off. Regarding the "Outlet No. 001" samples, CSB WWTP was performing well and BOD and TSS parameters were within NPDES Permit limitations.

The Executive Summary in the REIC reports (copies provided to DEP) for each WER sampling event provides a concise overview of the results. The details of the analytical results are provided in the successive sections of each of the REIC reports.

For WER#1: The WER is 19.5 based on the normalized dilute mineral water EC50. If the SMAV for ceriodaphnia dubia EC50 is used, the WER is 6.05.

For WER#2: The WER is 11.2 based on the normalized dilute mineral water EC50. If the SMAV for ceriodaphnia dubia EC50 is used, the WER is 5.22.

Geo. Mean: Taking the geometric mean of the results from both WERs, the WER is 14.5 based on the normalized dilute mineral water EC50. If the SMAV for ceriodaphnia dubia EC50 is used, the WER is 5.62.

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WER 1

1. The CSB Chains of Custody (COCs) for outlet 001 and upstream outlet 001 composite samples collected 10-15 through10-16-2013 does not provide the pH of the samples. The EPA Streamlined Water-Effect Ratio Procedure for Discharges of Copper requires analysis of pH. Since pH is a field parameter, the analysis should have been performed at the time of sampling and this data should have been included on the COC. Please provide this parameter and/or indicate in the report where this is located.

pHs were taken, but not written down on the CSB's COCs. The pH results were: 6.76 @ Outlet No. 001 and 7.25 @ Upstream Outlet No. 001. Attached are corrective copies of the COC for each sample.

2. The CSB COC for Upstream Outlet 001 lists a compositing duration of 10:06 10-15-13 through 10:20 10-16-13 however the COC shows that the samples were relinquished at 9:00 on 10-16-13 (which is before the end of the compositing period). Please provide clarification if this is an error on the report, COC, or an issue with the monitoring device.

The CSB's COC for Upstream Outlet No. 001 is correct as reported. The Upstream Outlet No. 001 sample was a composited grab using a core sampler (taken between 10:06 to 10:20 am on 10-15-13). The samples were cooled after collection and picked up by REIC Lab the following day, 10-16-13. See Part 6. QA Requirements, sub section 6.1.3 of the CSB's Proposed WER for Copper (10-11-13) for sampling procedure.

WER 2

3. The sample information provided in the REIC data report states that the composite sample at upstream outlet 001 was collected from 7:00 11-18-13 to 7:00 11-19-13 *(this is the "Outlet No. 001" 24-hr composite dates and times, not the "Upstream Outlet No. 001")* however the COC for this sample states that the sample was collected from 10:13 11-18-13 to 10:25 (presumably on 11-19-13). The COC also states that the sample was relinquished on 11-19-13 at 8:05 which is not consistent with the collection time on the COC. Please provide clarification if this is an error on the report, COC, or an issue with the monitoring device.

The sample times and dates for "Upstream" Outlet No. 001 and Outlet No. 001 are interchanged in this comment.

The CSB's COC for Upstream Outlet No. 001 is correct as reported. The Upstream Outlet No. 001 sample was a composited grab using a core sampler (taken between 10:13 to 10:25 am on 11-18-13). The samples were cooled after collection and picked up by REIC Lab the following day, 11-19-13. See Part 6. QA Requirements, sub section 6.1.3 of the CSB's Proposed WER for Copper (10-11-13) for sampling procedure.

4. The CSB COC for upstream outlet 001 does not provide the temperature at which the samples were received by the laboratory. Please provide this parameter and/or indicate in the report where this is located.

The temperature reading is encircled (2°C) in the lower right corner of the CSB's COC. Upon receipt in its lab, REIC measures the temperature of the samples and records it on the CSB's COC. The temperatures that REIC measured were included on each CSB

COC, but may not have been legible in the copies sent to the DEP. Here's a summary of the sample temperatures for both WERs:

Sample Site:	*Outlet No. 001*	*Upstream Outlet No. 1*	*Equipment Blanks*
WER #1	*1.6°C*	*1.6°C*	*1.6°C*
WER#2	*2.0°C*	*2.0°C*	*6.0°C*

5. Method Detection Limits (MDLs) are not provided in the analytical data for equipment blanks. Please provide and/or indicate in the report where this is located – or an explanation of why this was not reported.

REIC didn't have the cell with the MDL turned on to display it in its program. Attached is a corrective copy of REIC's analytical data showing the MDL.

6. The analysis date shown for dissolved organic carbon in the laboratory data is 1-22-13. This date is not consistent with the collection date of the samples and is most likely a reporting error but please clarify to ensure this is a reporting error.

REIC confirmed that the date was incorrectly entered into its program. The correct date is 11-22-13. Attached is a corrective copy or REIC's analytical data showing the correct date.

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Tim G. Haapala, P.E.
CSB Operations Manager

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SANITARY BOARD OF THE CITY OF CHARLESTON
CHAIN OF CUSTODY

USER SAMPLED: CSB	SAMPLED BY: ERlyj	TURN AROUND TIME
ADDRESS:	PO NUMBER:	STANDARD 1-DAY 2-DAYS
SAMPLE TYPE: KANAWHA TRANSLATOR STUDY 1	POINT OF COLLECTION: OUTLET 001	OTHER:

USER ID	SAMPLE ID	TIME START STOP	SAMPLE DATE	SAMP TYPE	# OF CONT	PRES	PH	EPA METHOD	DESIRED MDL	PARAMETER TO BE SAMPLED
WEREFF	201310TR	0700-0700	10/15-10/16/13	C	1	HN03	<2	200.8	.001	· CU TOTAL RECOVERABLE HARDNESS
WEREFF	2013DIS	0700-0700	10/15-10/16/13	C	1	HN03		2008	.001	· CU DISSOLVED FILED FILTERED
WEREFF	201310TSS	0700-0700	10/15-10/16/13	C	1	ICE		SM2540D	2	· TSS
WEREFF	201310A	0700-0700	10/15-10/16/13	C	1	ICE		SM2320B	1	· ALKALINITY
WEREFF	201310DOC	0700-0700	10/15-10/16/13	C	1	H2SO4	<2	SM5310C	.2	· DISSOLVED ORGANIC CARBON FIELD FILTERED
WEREFF	201310	0700-0700	10/15-10/16/13	C	3	ICE		*		WER EFFLUENT SAMPLE
WEREFF	FIELD BLANK	0810	10/16/13	G	1	HN03	<2	200.8	.001	CU TOTAL RECOVERABLE

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Eric A. Roberts	10-16-13	0900	MAHolley 10/16/13 10:10
RELINQUISHED BY: MAHolley	DATE: 10/16/13 1650	TIME:	RECEIVED BY: [signature] 10-16-13 1650

1.6

COMMENTS: * Acute toxicity testing manual EPA -821-R-02-012
RECEIVING STREAM - KANAWHA RIVER NPDES PERMIT # WV0023205

By TGH on 2-7-14 : CSB Lab measured pH on 10/16/13 @ Outlet No. 001 was 6.76

THE SANITARY BOARD

SANITARY BOARD OF THE CITY OF CHARLESTON
CHAIN OF CUSTODY

USER SAMPLED: CSB	SAMPLED BY: ER / LH	TURN AROUND TIME
ADDRESS:	PO NUMBER:	STANDARD 1-DAY 2-DAYS
SAMPLE TYPE: KANAWHA WER STUDY	POINT OF COLLECTION: UPSTREAM OUTLET 001	OTHER:

USER ID	SAMPLE ID	TIME START STOP	SAMPLE DATE	SAMP TYPE	# OF CONT	PRES	PH	EPA METHOD	DESIRED MDL	PARAMETER TO BE SAMPLED
WERUS	201310TR	1006 - 1020	10-15-13	C	1	HN03	<2	200.8	.001	CU TOTAL RECOVERABLE/ HARDNESS
WERUS	201310DIS	1006 - 1020	10-15-13	C	1	HN03	<2	200.8	.001	CU DISSOLVED FIELD FILTERED
WERUS	201310TSS	1006 - 1020	10-15-13	C	1	ICE		SM2540D	2	TSS
WERUS	201310A	1006 - 1020	10-15-13	C	1	ICE		SM2320B	1	ALKALINITY
WERUS	201310DOC	1006 - 1020	10-15-13	C	1	H2SO4	<2	SM5310C	.2	DISSOLVED ORGANIC CARBON FIELD FILTERED
WERUS	201310	1006 - 1020	10-15-13	C	1	ICE		*		WER RIVER SAMPLE
WERUS	BLANK	1003	10-15-13	G	1	HN03	<2	200.8	.001	CU TOTAL RECOVERABLE

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Erik A. Roberts	10-16-13	0900	MAHolley 10/16/13 10:16
RELINQUISHED BY: MAHolley	DATE: 10/16/13 1650	TIME:	RECEIVED BY: [signature] 10-16-13 1650

1.6

COMMENTS:

* Accute toxicity testing manual EPA -821-R-02-012

RECEIVING STREAM - KANAWHA RIVER NPDES PERMIT # WV0023205

By TGH on 2-7-14: CSB Envr. Compliance staff used a field meter to measure pH of the upstream Outlet No. 001 sample on 10-15-13, which was 7.25

REI Consultants, Inc. - Analytical Report

WO#: 1311J31

Date Reported: 12/11/2013

Client:	CHARLESTON SANITARY BOARD	**Collection Date:**	11/18/2013 8:18:00 AM
Project:	KANAWHA WER STUDY 2 NOV 2013	**Date Received:**	11/19/2013
Lab ID:	1311J31-01A	**Matrix:**	Liquid
Client Sample ID:	2013 EQUIPMENT BLANKS	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP-MS			**Method: EPA 200.8**				**Analyst: JD**	
Copper	0.0016	0.0010	0.0050	NA	J	mg/L	11/21/2013 5:04 PM	PA/VA

By TGH on 2-7-14:
Report corrected by REIC on 2-7-14 to show MDL

REI Consultants, Inc. - Analytical Report

WO#: 1311J31

Date Reported: 12/11/2013

Client:	CHARLESTON SANITARY BOARD	**Collection Date:**	11/18/2013 8:18:00 AM
Project:	KANAWHA WER STUDY 2 NOV 2013	**Date Received:**	11/19/2013
Lab ID:	1311J31-02A	**Matrix:**	Liquid
Client Sample ID:	2013/FIELD FILTERED	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP-MS			**Method: EPA 200.8**				**Analyst: JD**	
Copper	0.0011	0.0010	0.0050	NA	J	mg/L	11/21/2013 5:10 PM	PA/VA
ORGANIC CARBON, TOTAL			**Method: SM5310 C-2000**				**Analyst: DSD**	
Total Organic Carbon	0.57	0.20	1.00	NA	J	mg/L	11/22/2013 3:34 PM	PA/VA

By TGH on 2-7-14:
Report corrected by REIC on 2-7-14 to correct analysis date of TOC